

BEES COLLECTED BY NATHAN BANKS IN THE  
VICINITY OF THE PANAMA CANAL.

BY T. D. A. COCKERELL.

About one-half of the species collected are as follows:

*Melipona orbignyi phenax* (Cockerell)

Bella Vista, Aug. 7. I now conclude that *M. orbignyi jenningsi* Ckll. was described from the male of *M. phenax*, the latter (from Ecuador) having priority of place.

*Melipona fulvipes triplaris* Cockerell

Barro Colorado, Aug. 2. Larger and more robust than the type of *triplaris*, but otherwise the same.

*Euglossa piliventris imperialis* Cockerell

Barro Colorado, Aug. 15. Male

*Euglossa cordata* (Linnæus)

Barro Colorado, June 20, July 25, Aug. 2

*Centris pæcila* Lepeletier

Red Tank, June 30. Male. Gribodo (1893) described the male of *C. pæcila* from Panama.

*Centris tarsata* Smith

Barro Colorado, July 24. Female. Agrees with one from Guatemala. Friese considers it a form of *C. lanipes* (Fabricius).

*Centris inermis* Friese

Red Tank, June 30. Female.

*Exomalopsis zexmenia* Cockerell

Mt. Hope, July 8. Female *E. paitensis* Ckll., 1926, from Peru, is perhaps too closely allied to *E. zexmenia* and is probably to be considered only a southern race. Northward (Pt. Isabel,

Texas) *E. zexmaniae* has dark hair behind ocelli, but the Panama form has it very pale reddish. In *E. paitensis* this hair is creamy white.

**Melissodes tepaneca panamensis** subsp. n.

Female (type). Size and appearance of *M. tepaneca* Cresson, but thorax above with very bright fox-red hair, the disc of mesothorax with a large patch of short black hair, not reaching sides. Head very broad; eyes grey or green (doubtless green in life); clypeus densely rugosopunctate; face and cheeks with dull white hair; some long black hairs behind ocelli, and back of this, the occiput has bright fulvous hair; flagellum bright ferruginous beneath except at base; tegulae clear ferruginous; wings dusky; lower part of pleura in front with sooty hair; legs with fulvous hair, black on anterior basitarsi in front; scopa of hind legs large; bright ferruginous hair on inner side of hind tarsi; abdomen with dense fulvous bands, second segment with bands at base and middle; fourth with black hair at extreme base, and a little in middle apically; fifth with all hair black except at extreme sides, sixth with black. There is black hair on outer side of middle tibiae apically, and around hind knee-plate. Male. The single male with the same data, might well pass as *M. tepaneca*. Clypeus lemon yellow; labrum and base of mandibles cream-color; antennae very long, flagellum bright ferruginous beneath; hair of thorax above fulvous, without any black patch.

Cristobal, Aug. 10 3 ♀. 1 ♂. I thought at first to refer this to *M. tepaneca aschenborniana* Ckll., based on the male from Guatemala, but the fifth segment has black hair in middle, and the hair between the basal and median bands on second segment is dusky yellowish, not black. It also differs from *M. costaricensis* (*Tetralonia costaricensis* Friese). I am not sure that this may not be *Melissodes cajennensis* (Lepelletier) based on the male from Cayenne, but in the absence of females from that region it is impossible to reach any conclusion.

*Hypanthidium taboganum* Cockerell

Ancon, Aug. 6, male. Bella Vista, Aug. 7. Female. Mr. H. F. Schwarz (American Museum Novitates, 253) has recently

treated this as a variety or race of *H. mexicanum* (Cresson). This cannot be correct as I possess a male paratype of *H. mexicanum* and find it to differ radically in the sculpture of the first two abdominal segments, which have stronger, sparse or well separated punctures.

### **Dianthidium banksi** sp. n.

Female. Length 5 mm. (abdomen curved downward); narrow, head and thorax very coarsely punctured; markings of head, thorax and abdomen red, probably yellow in life; red marks of head confined to band along inner orbits, from level of middle of clypeus to more than half way up front, and an entire occipital band not going much below tops of eyes; scape red in front third antennal joint yellow on outer side, flagellum red beneath; tubercles with a small spot; anterior margin of mesothorax with a very broadly interrupted red band; scutellum and axillæ red; tegulæ black; wings very dark; anterior legs yellowish ferruginous in front; middle knees and tibiæ in middle reddish; hind legs black; abdomen finely punctured; first segment with a large red spot on each side, second with a short transverse stripe on each side, third to fifth with entire bands; ventral scopa white. The sides of metathorax are smooth and polished.

Barro Colorado, June 20. Resembles *D. quadrimaculatum* Ckll. (Bolivia) in most respects, differing conspicuously by the black tegulæ and mainly black scape. Resembles *D. gualanense* Ckll. (Guatemala) by the black tegulæ, but differs by the light scutellum and axillæ. The three species are very closely allied.

### **Ceratina reducta** sp. n.

Female. Length about 5 mm.; head and thorax highly polished, smooth, dark olive green; abdomen very faintly greenish, hind margins of segments 3 to 5 obscurely reddish; legs ferruginous, femora dusky, with a more or less evident pale stripe in front. Head round seen from in front; mandibles red in middle; labrum pale red, binodose; clypeus with a very broad ivory-colored band, broadly rounded above, somewhat constricted in

middle; short pale stripes at sides of front between antennæ and eyes; large pale yellow bands on cheeks, broad above, attenuate below; cheeks almost wholly impunctate; scape light in front, flagellum obscurely reddish beneath; disc of mesothorax impunctate; tubercles pale yellow; tegulæ light ferruginous; wings dusky hyaline, nervures and stigma dark; abdomen beneath with thin pure white hair.

Taboga Island, June 29. Related to such species as *C. quinquemaculata* Ckll. (Guatemala), but on account of the small size, color, and reduced markings, at first suggesting alliance with the smaller members of the *C. dupla* group.

*Ceratina viridula* Smith

Taboga Island, June 29.

*Colletes rohweri* Cockerell.

Las Sabanas, July 7, female. *C. rohweri* was described from a male collected at Zaruma, Ecuador. The present female agrees well except in the usual sexual characters, and the lack of distinct bands on the abdomen, but these appear to have been denuded, the specimen being old, with ragged wings. The abdomen is of the fusiform type; the very broad hind tibiæ are covered with black hair on outer side; the thorax above shows much black hair, but there is a dense band of white hair between mesothorax and scutellum; tegulæ very dark brown; wings strongly stained with brown; flagellum obscure reddish beneath except at base; malar space very short; mandibles red apically. In Swenk's table (1908) it stands near *C. intermixtus* Swenk, but is quite distinct. It is somewhat allied to *C. motaguensis* Ckll. (Guatemala).

*Halictus townsendi* Cockerell

Gamboa, July 9, two males; Ancon, Aug. 4, two females; Cristobal Aug. 10, two females; Red Tank June 30, July 1, two females. The females vary greatly in the size of the head. This is hardly more than a race of the North American *H. armaticeps* Cresson.

## Subgenus CHLORALICTUS Robertson

The small bees referable to this group are not readily differentiated without the aid of the microscope. In the following key the characters are mostly microscopic.

Tegulæ closely punctured; front densely punctured; malar region with two little tubercles; flagellum light brown beneath except at base; antennal joints 3 to 5 all short, transverse, much shorter than those following; mesothorax coarsely microscopically tessellate, with rather close fine punctures; area of metathorax with strong but irregular rugæ, going from base to apex; scutellum and posterior face of metathorax roughened; hind spur with four long oblique teeth; first abdominal segment smooth and polished, with microscopic transverse lineolation, the base hairy; basal corners of second and third segments, and fourth very broadly right across, with minute appressed plumose hairs. . . . . *Halictus gæthalsi* sp. n.

Tegulæ not punctured; hind spur with few strong spines. . . . . 1

1. Area of metathorax large, not sharply defined, microscopically reticulate, with short plicæ at base only; front very densely punctured; antennal joints 3 to 5 short, the following increasingly longer, but 6 not greatly longer than 5; mesothorax microscopically tessellate and rather closely punctured; scutellum rather sparsely punctured; hind spur with three large spines or teeth. . . . . *Halictus lessepsi* sp. n.

Area of metathorax with strong rugæ from base to apex; scutellum in middle with a broad band of small crowded punctures, and on each side of this a sparsely punctured area. . . . . 2

2. Larger and more robust; mesothorax dullish and coarsely punctured, the surface microscopically tessellate, the punctures closer posteriorly, on posterior middle of disc they are separated on the average by less than a puncture width; antennal joints 3 to 5 not very short, 6 not much longer than 5; hind margin of third abdominal segment very narrowly testaceous. . . . .

*Halictus gorgasi* sp. n.

Smaller, with mesothorax shining, not coarsely punctured, the punctures sparse on disc; front densely punctured; antennal joints 3 to 5 successively longer; base of second and third

abdominal segments with thin bands of appressed plumose hairs, broad at sides, on 2 rapidly narrowing, reduced to a few isolated hairs in middle, on 3 narrow (about 3 hairs deep) in middle. . . . . *Halictus balboæ* sp. n.

To my surprise all these small *Chloralictus* prove new.

### **Haclitus goethalsi** sp. n.

Female. Length 4 mm. or rather more, anterior wing 3 mm.; head and thorax dark green, dull, the clypeus shining; head longer than broad, face rather narrow, clypeus produced; mandibles reddened apically; flagellum obscure reddish brown beneath except basally; mesothorax finely punctured, median groove very distinct; area of methathorax entirely dull, plicatulate; posterior face small; tegulæ very dark; wings greyish, stigma dilute brown; legs dark; abdomen black, shining, white-pruinose at basal corners of first three segments and all over fourth; hind margins of segments obscurely brown.

Bella Vista, Aug. 7, 1924. Compared with *H. pseudotegularis* Ckll., it is larger, and the head is not so round seen from in front. In the Sandhouse table it runs nearest to *H. ellisia* Sandh. from Massachusetts, but is of course different. Miss Sandhouse in her description says the wings of *H. ellisia* are clear hyaline, but in the table places it with those having more or less dusky wings.

### **Haclitus lessepsii** sp. n.

Female. Length about 5.5 mm., anterior wing about 3.5 mm.; robust; head and thorax brassy green, moderately shining; abdomen black; mandibles red, bright in middle, extreme base black, tip dark; flagellum ferruginous beneath except at base; tegulæ polished, dark reddish-brown; wings strongly dusky, stigma very dark brown; legs black, with the tarsi bright ferruginous; head broader than long, clypeus little produced; clypeus well punctured, and with coppery tints; supra-clypeal area polished, brassy; a shining space above and laterad of each antenna but greater part of front dull, dark green; cheeks broadly rounded, shining with thin white hair; mesothorax moderately

shining with coppery tints in middle, punctures distinct under lens, parapsidal grooves distinct; scutellum and area of metathorax shining, postscutellum dull and dark; hair of thorax above dull white, inconspicuous; abdomen shining, very thinly hairy, but quite without hair bands or patches.

Bella Vista, Aug. 7, 1924. Several species are more or less similar to this, as follows:

*H. exiguiformis* Ellis agrees in area of metathorax with basal plicæ, and is really a very similar species, but it does not have the clear red tarsi. *H. tropicior* Ellis has the red hind tarsi, but disc of mesothorax is posteriorly sparsely punctured, and not tessellate, but smooth and polished. *H. lessepsi* has it tessellate all over. *H. chrysonotus* Ellis also has red tarsi, but the area of metathorax is unlike that of any of the Panama species; the mesothorax is much more shiny than in *H. lessepsi*. The tegulæ are quite a different color from those of *H. balboæ*. *H. tenax* Sandh. (Colorado) has a similar metathoracic area, but is otherwise different. *H. umbripennis* Ellis (Guatemala) has a red stigma and is quite distinct. *H. deceptor* Ellis (Guatemala) has plicæ of metathoracic area weak and only going one third of way toward margin, but is otherwise quite different. *H. indistinctus* Crawford falls near here by area of metathorax, but legs are all dark. *H. exiguus* Smith differs by the much longer head, smoother and more polished mesothorax, and pale stigma.

### ***Halictus gorgasi* sp. n.**

Female. Length about 6 mm.; wings short, anterior wing about 3.6 mm.; head and thorax dull brassy green, with very little hair; head broad, clypeus not much produced; apical half of mandibles dark red; clypeus short; clypeus and sides of face with very strong punctures; front dull, very densely punctured, the punctures tending to run into striæ; apical part of flagellum dull red beneath; mesothorax dull, very strongly and coarsely punctured, with slight coppery tints; scutellum more finely punctured, and shining on each side of middle; area of metathorax coarsely wrinkled; posterior face of metathorax dullish, coarsely sculptured, more or less striate, its lateral margins sharply de-

fined; tegulæ very dark brown; wings stained with reddish; and nervures pale dull reddish-brown, the stigma decidedly of the pale type; mesopleura dull and very rough; legs black, with white hair; abdomen black, with very little hair (no bands or spots), extreme apex dark reddish, hind margins of segments obscurely reddish.

Bella Vista, Aug. 7, 1924. Distinct by the coarse sculpture. In the Sandhouse table (1924) it runs to 67, but after that does not fit in well. It could however be compared with *H. crassiceps* Ellis, *H. perpunctatus* Ellis or *H. cattellæ* Ellis, which are species of temperate North America, differing in various respects.

### **Halictus balboæ sp. n.**

Female. Length about 5 mm., anterior wings 3 mm.; head and thorax very dark green, except that the mesothorax and scutellum are brassy green and shining, the mesothorax more brassy than the scutellum; hair thin and pale; clypeus rather sparsely punctured, apical half black and just above the black a rosy zone; mandibles basally black, apically red; head broad sides of face striate-punctate; flagellum obscure reddish beneath; except at base; mesothorax shining and sparsely punctured; area of metathorax glistening, strongly plicate; posterior truncation small, well defined; tegulæ very dark brown; wings hyaline, slightly dusky (greyish, not at all reddish); stigma and nervures dull pale reddish brown; legs black, with pale hair, small joints of tarsi slightly reddish; abdomen shining black with narrow thin hair-bands at bases of second and third segments; apical part diffusely hairy.

Bella Vista, Aug. 7, 1924, three females. *H. hypochlorus* Ellis is superficially similar, but differs by the narrower, sub-metallic, abdomen, with hind margins of segments more or less reddish.

*H. cubitalis* Vachal is large (6.75 mm.) and from the meagre description apparently distinct. It is however nearer to this than to any of the other Panama species.



*Megalopta fornix panamensis* Cockerell

Barro Colorado (Dodge).

*Augochlora vesta terpsichore* (Holmberg)

Red Tank June 31; Bella Vista, Aug. 7; Ancon, Aug. 9. This is identical with the form from Guayaquil, Ecuador, referred to *A. vesta terpsichore*, in Jn. N. Y. Ent. Soc. 1914. pp. 324 and 327. If it is different from Holmberg's bee, there is at present no way to show wherein the difference lies.

*Augochlora nigrocyanea* Cockerell

Ancon, Aug. 6 one female.

*Augochlora quiriguensis* Cockerell

Barro Colorado (Dodge). One female. This has the mesothorax black with green margins, to this extent agreeing with the variety *sidæfoliæ* Cockerell. It is intermediate between the typical form and the variety.

*Augochlora cordiæfloris* Cockerell

Gamboá, July 9. One female. Compared with the type (from Mexico), it differs by the golden green mesothorax, but this appears to be only a variation.